CODE ANALYSIS

APPLICABLE CODES

	Year		Year
International Building Code	2006	National Electrical Code	2005
International Mechanical Code	2006	Uniform Code for	
International Plumbing Code	2006	Building Conservation	
International Fire Code		ADA Accessibility	
International Energy Conservation Code		Guidelines	

Replacing Boiler, Chiller, Pumps- No Building Changes.

A. Occupancy and Group: Existing Building No Changes

Change in Use: Yes _____ No __X__ Mixed Occupancy: Yes __X__ No _____

Special Use and Occupancy (e.g. High Rise, Covered Mall): WORKFORCE SERVICES

B. Seismic Design Category: _____ Design Wind Speed: __100__ mph

C. Type of Construction (circle one): Existing Building No Changes

$\frac{I}{A}$ $\frac{I}{B}$ $\frac{II}{A}$ $\frac{II}{B}$ $\frac{III}{A}$ $\frac{III}{B}$ $\frac{IV}{HT}$ $\frac{V}{A}$ $\frac{V}{B}$

D. Fire Resistance Rating Requirements for the Exterior Walls based on the fire separation distance (in hours): Existing Building No Changes

North: _____ South: _____ East: _____ West: _____

E. Mixed Occupancies: __N/A__ Nonseparated Uses: __N/A__

F: Sprinklers:

Required: _____ Provided: __X__ Type of Sprinkler System: __Wet__

G: Number of Stories: __One__ Building Height: _____

H: Actual Area per Floor (square feet): Existing Building No Changes

I: Tabular Area: Existing Building No Changes

J: Area Modifications: Existing Building No Changes

a) $A_a = A_t + \left[\frac{A_t \, I_f}{100}\right] + \left[\frac{A_t \, I_s}{100}\right]$ $\qquad I_f = 100\left[\frac{F}{P} - 0.25\right]\frac{W}{30}$

b) Sum of the Ratio Calculations for Mixed Occupancies:

$\frac{\text{Actual Area}}{\text{Allowable Area}} \leq 1$

c) Total Allowable Area for:

1) One Story: _____
2) Two Story: $A_a(2)$_____
3) Three Story: $A_a(3)$_____

d) Unlimited Area Building: Yes _____ No _____ Code Section: _____

K. Fire Resistance Rating Requirements for Building Elements (hours). Existing Building No Changes

Element	Hours	Assembly Listing	Element	Hours	Assembly Listing
Exterior Bearing Walls			Floors - Ceiling Floors		
Interior Bearing Walls			Roofs - Ceiling Roofs		
Exterior Non-Bearing Walls			Exterior Doors and Windows		
Structural Frame			Shaft Enclosures		
Partitions - Permanent			Fire Walls		
Fire Barriers			Fire Partitions		
			Smoke Partitions		

L. Design Occupant Load: __N/A__ Existing Building No Changes

Exit Width Required: __N/A__ Exit Width Provided: __N/A__

M. Minimum Number of Required Plumbing Facilities: Existing Building No Changes

a) Water Closets - Required (m) __N/A__ (f) _____ Provided (m) _____ (f) _____
b) Lavatories - Required (m) __N/A__ (f) _____ Provided (m) _____ (f) _____
c) Bath Tubs or Showers: __N/A__
d) Drinking Fountains: __N/A__ Service Sinks: __N/A__

FOOTNOTES:

1) In case of conflict with the U.S. Department of Justice Federal Registers Parts I through V - ADA Guidelines and specific reference to the International Building Code Accessibility Chapters, the more restrictive requirement shall govern.
2) Additional Code Information shall be provided at the discretion of the Building Official for Complex Buildings. Including, but not limited to:
   a) High Rise Requirements.
   b) Atriums.
   c) Performance Based Criteria.
   d) Means or Egress Analysis.
   e) Fire Assembly Locator Sheet.
   f) Exterior and Interior Accessibility Route.
   g) Fire Stopping, Including Tested Design Number.
3) This Project Is Only Replacing Existing Mechanical Equipment That Are Past Ashrae's Recommended Service Life And Are Failing.

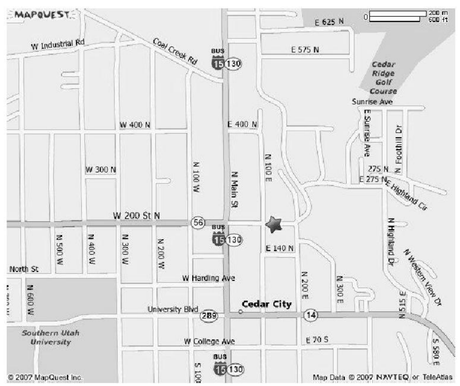
DEPARTMENT OF WORKFORCE SEVICES
CEDAR BOILER/CONDENSER REPLACEMENT
DFCM # 07184920

State of Utah—Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

4110 State Office Building / Salt Lake City, Utah 84114 / 538-3018

DRAWING INDEX:



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PROFESSIONAL ENGINEER 11/21/07 WINWARD M. PACKER No. 375080 STATE OF UTAH

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MECHANICAL LEGEND

SYMBOL	ABR.	DESCRIPTION
GENERAL TERMINOLOGY		
A / ME-101		SECTION LETTER DESIGNATION SECTION DRAWN ON THIS SHEET
A2		DETAIL NUMBER DESIGNATION CORRESPONDING WITH GRID LOCATION
AH / 1		MECHANICAL EQUIPMENT DESIGNATION EQUIPMENT ITEM DESIGNATION
1		REVISION DESIGNATOR AND NUMBER
1		KEY NOTE DESIGNATOR AND NUMBER
	POC	POINT OF CONNECTION
	POR	POINT OF REMOVAL
AFF		ABOVE FINISHED FLOOR
℄ EL.		CENTER LINE ELEVATION
GC		GENERAL CONTRACTOR
MC		MECHANICAL CONTRACTOR
CC		CONTROL CONTRACTOR
EC		ELECTRICAL CONTRACTOR
NIC		NOT IN CONTRACT
NTS		NOT TO SCALE
C		COMMON
NC		NORMALLY CLOSED
NO		NORMALLY OPEN

SYMBOL	ABR.	DESCRIPTION
WET SIDE		
		PUMP
		UNION
		MANUAL ACTUATOR (BALL, BUTTERFLY, NEEDLE, ETC. VALVES)
		MANUAL ACTUATOR (GATE, GLOBE, S&D, OS&Y, ETC. VALVES)
		THREADED VALVE CONNECTION
		FLANGED VALVE CONNECTION
		BUTTERFLY VALVE
		GATE VALVE
		GLOBE VALVE - STRAIGHT PATTERN
		GLOBE VALVE - ANGLE PATTERN
		CHECK VALVE
P	PRV	PRESSURE REDUCING VALVE
	CBV	CIRCUIT BALANCING VALVE
	BV	BALL VALVE
P	PRV	PRESSURE RELIEF VALVE
		NEEDLE VALVE
		AUTOMATIC AIR VENT
		MANUAL AIR VENT
		STRAINER
		STRAINER W/ PLUGGED BLOW OFF
	VTI	VENTURI
		PRESSURE GAUGE AND GAUGE COCK - WATER
		THERMOMETER AND THERMOWELL
F		FLOW SWITCH

SYMBOL	ABR.	DESCRIPTION
WET SIDE CONT		
		DIRECTION OF FLOW
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		EXISTING PIPING TO BE REMOVED
		EXISTING PIPING TO REMAIN
		NEW PIPING
		PIPE CAP OR PLUG
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
D		CONDENSATE DRAIN
G		NATURAL GAS PIPING
CF		CHEMICAL FEED LINE
MU		MAKE-UP WATER LINE
	CW	CULINARY COLD WATER
DR		EQUIPMENT DRAIN
HWS		HEATING WATER SUPPLY
HWR		HEATING WATER RETURN
L		REFRIGERANT LIQUID
S		REFRIGERANT SUCTION

GENERAL NOTES:

G-1 MECHANICAL INFORMATION IS NOT LIMITED TO THE MECHANICAL DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR ON SITE EXISTING CONDITIONS AND OBSTRUCTIONS THAT WILL AFFECT HIS WORK. CONTRACTOR SHALL COORDINATE BUILDING OPENINGS WITH EQUIPMENT SIZES AND MAKE ADJUSTMENTS ACCORDINGLY.

A - EACH DRAWING SHEET AND THE SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH ITEMS SHOWN AND NOTED ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN ALL PLACES. ITEMS IN SPECIFICATIONS OR DRAWINGS LISTED WHICH ARE DIFFERING IN EFFICIENCY OR QUALITY SHALL BE HELD TO THE GREATEST OF: EFFICIENCY, QUALITY OR GOVERNING CODE.

B - THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE INSTALLATION OF THE SYSTEMS ACCORDING TO THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS.

C - THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT WITH PROPER SERVICE ACCESS AND CLEARANCES ACCORDING TO MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL REVIEW SUPPLIERS BID PACKAGES FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS, SCHEDULES, AND DESIGN INTENT (ALL EQUIPMENT AND METHODS). THE CONTRACTOR SHALL REMOVE AND REINSTALL CORRECTLY AT HIS OWN EXPENSE ANY EQUIPMENT NOT IN COMPLIANCE.

D - THE CONTRACTOR SHALL CONSULT MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SIZES, METHODS, ACCESSORIES, AND CLEARANCES IN SPACE AVAILABLE PRIOR TO BIDDING PROJECT.

E - ANYTHING NOT CLEAR OR IN CONFLICT WILL BE EXPLAINED BY MAKING APPLICATION TO THE ENGINEER IN WRITING.

G-2 ANY AND ALL ALTERATIONS TO THE SYSTEM SHOWN SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO CHANGES FOR APPROVAL. CONTRACTOR SHALL NOT START ANY CHANGES UNTIL NOTIFIED IN WRITING. IF CHANGES ARE MADE PRIOR TO APPROVAL CONTRACTOR SHALL TAKE ALL RESPONSIBILITY FOR THE CHANGES MADE AND ALL COSTS RELATING TO FAILURE OR REPLACEMENT OF ALTERATIONS.

G-3 CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATIONS.

G-4 THE WORKING DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND, OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR MECHANICAL EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL DRAWINGS.

G-5 THE INSTRUCTION TO "PROVIDE" ALSO INCLUDES INSTALLATION.

G-6 THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY IN HANDLING AND DISPOSING OF REFRIGERANTS, OILS, ETC. ALL SUCH MATERIALS SHALL BE HANDLED, DISPOSED, AND USED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS.

G-7 THE MECHANICAL CONTRACTOR SHALL VERIFY MOTOR VOLTAGES WITH THE DRAWINGS BEFORE ORDERING MOTORIZED EQUIPMENT AND CONTROLS.

G-8 SUPPLIERS SHALL REVIEW ALL DRAWINGS AND THE SPECIFICATIONS PRIOR TO SUBMITTING PRICES TO THE CONTRACTOR. ALL QUESTIONS AND DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BIDDING.

G-9 CONTRACTOR SHALL THOROUGHLY REVIEW AND SIGN SUBMITTALS FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS PRIOR TO ENGINEERS REVIEW. SUPPLIERS SHALL HIGHLIGHT OR MARK ALL INFORMATION REQUIRED TO SHOW COMPLIANCE TO THE SPECIFICATIONS. ALL REQUESTED EXCEPTIONS TO THE SPECIFICATIONS, OR SCHEDULES SHALL BE CLEARLY NOTED AND EXPLAINED. SUBMITTAL REVIEW AND ACCEPTANCE IS FOR DESIGN CONCEPT ONLY, AND DOES NOT AT ANY TIME RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO MEET SPECIFICATIONS, CAPACITIES, OR DESIGN INTENT.

G-10 ALL MECHANICAL SHALL BE INSTALLED AND CONFORM TO THE 2006 EDITION OF THE IMC AND IPC WITH UTAH ANNOTATIONS.

G-11 THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE DRAINING DOWN AND RE-FILLING OF THE EXISTING HOT WATER SYSTEM NECESSARY TO COMPLETE THE WORK OUTLINED BY THIS PROJECT. THIS INCLUDES PROVIDING THE REQUIRED CHEMICAL TREATMENT WHEN RE-FILLING THE SYSTEM.

G-12 ALL PIPING, EQUIPMENT AND MATERIALS SHALL BE AMERICAN MADE. "NO EXCEPTIONS."

G-13 THIS CONTRACTOR SHALL CONTRACT WITH A DESIGN BUILD ELECTRICAL CONTRACTOR FOR THE DESIGN AND CONSTRUCTION OF THE ELECTRICAL PORTION OF THIS PROJECT. ELECTRICAL INSTALLATION AND DESIGN SHALL BE PER 2005 NEC.

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PROJECT NAME & ADDRESS

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DFCM No. 07184920

176 E. 200 N., Cedar City, Utah

MARK	DATE	REVISION

PROJECT MANAGER: WP
DRAWN BY: LGD
CHECKED BY: SLW
DATE: 11/21/07
WHW JOB NO.: 07029

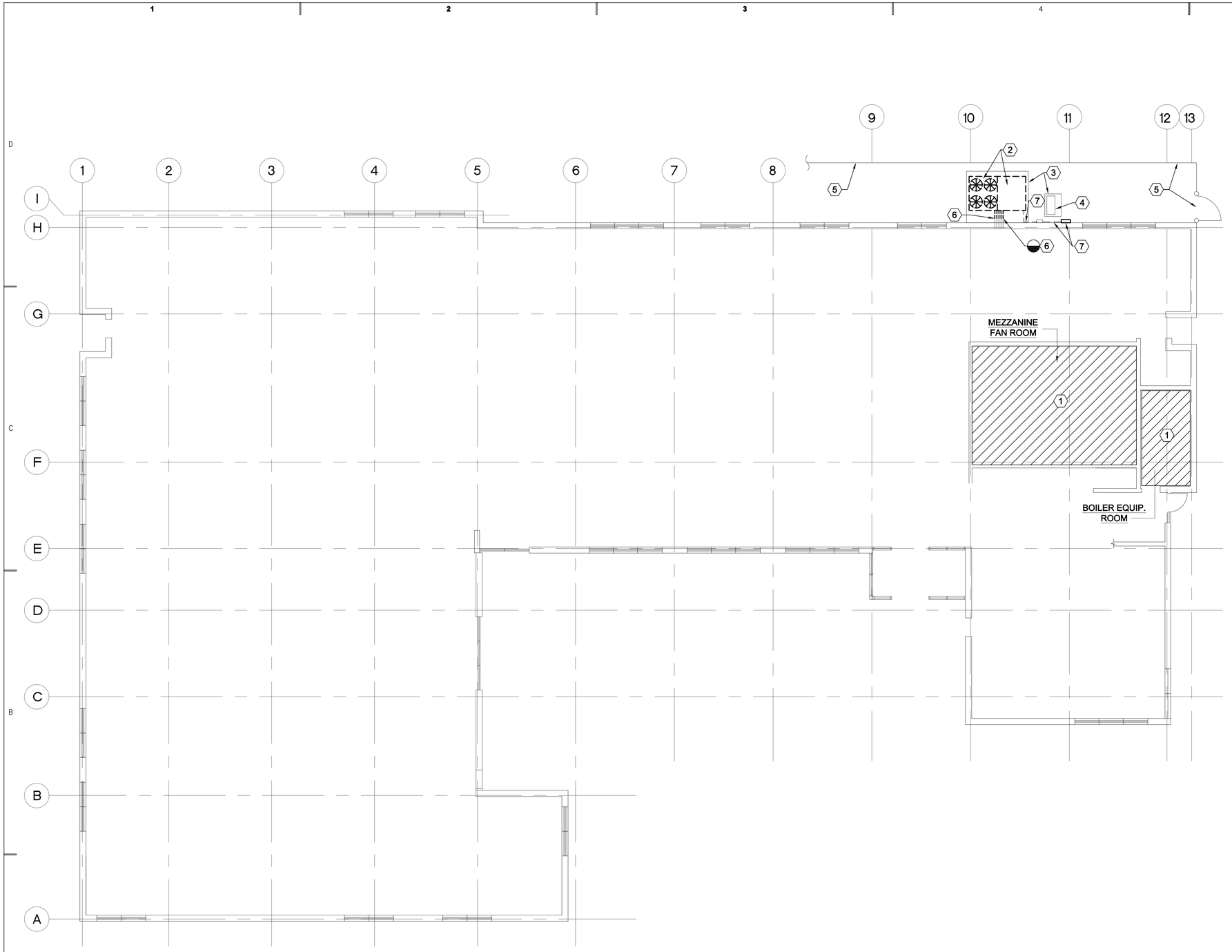
PROFESSIONAL ENGINEER 11/21/07 WINWARD M. PACKER No. 375080 STATE OF UTAH

SHEET TITLE

MECHANICAL GENERAL NOTES AND LEGEND

SHEET NO.

MG001



MECHANICAL DEMOLITION FLOOR PLAN

SCALE: 1/8" = 1'-0"

SHEET NOTES:

1. SEE LARGE SCALE SHEET MD401 FOR DEMOLITION OF THIS AREA.
2. REMOVE EXISTING AIR COOLED CONDENSING UNIT AND ALL ASSOCIATED ITEMS, ELECTRICAL, CONTROLS ETC.
3. EXISTING CONCRETE PADS SHALL REMAIN AND BE REUSED.
4. EXISTING CONDENSING UNIT, CONTROLS, PIPING, PAD AND ELECTRICAL SHALL REMAIN.
5. EXISTING CHAIN LINK FENCE AND GATE SHALL REMAIN.
6. EXISTING REFRIGERANT PIPING FROM UNIT TO THIS POINT SHALL BE REMOVED. REFRIGERANT PIPING THRU-WALL AND WITHIN BUILDING SHALL REMAIN.
7. REMOVE EXISTING DISCONNECT SERVING CU-6. ELECTRICAL DESIGN BUILD CONTRACTOR SHALL DETERMINE HOW HE WANTS TO REUSE CONDUIT AND WIRING. .

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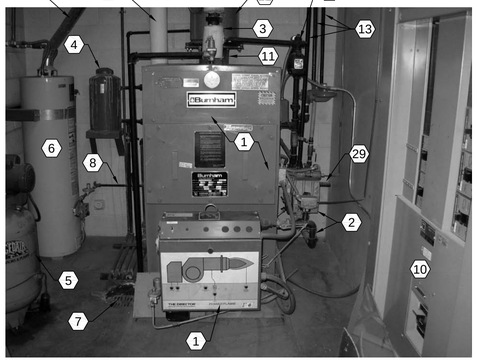
11/21/07
WINWARD M. PACKER
No. 375080
STATE OF UTAH

SHEET TITLE

MECHANICAL DEMOLITION FLOOR PLAN

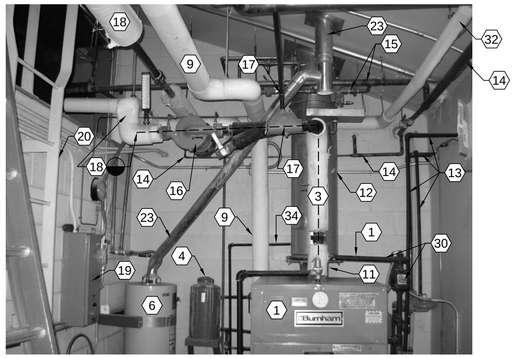
SHEET NO.

MD101



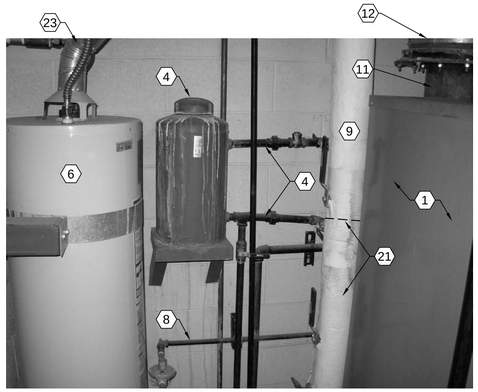
EXISTING BOILER ROOM LOOKING SOUTH

C1 SCALE: NONE



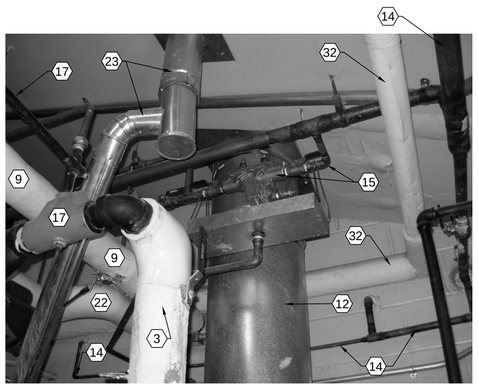
EXISTING BOILER ROOM LOOKING SOUTH

C2 SCALE: NONE



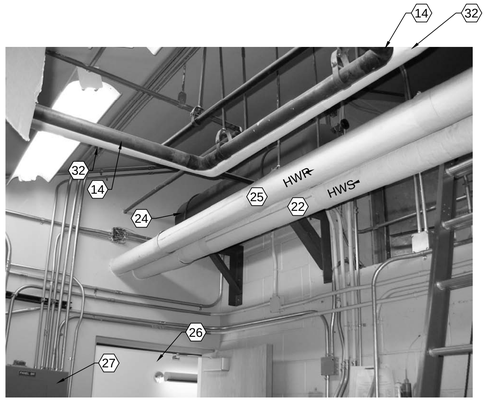
EXISTING HW HEATER-BOILER-POT FEEDER

C4 SCALE: NONE



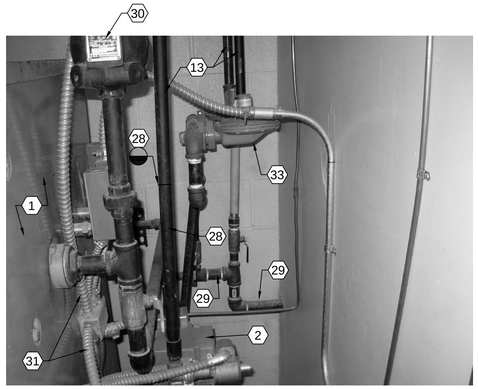
EXISTING BOILER HWS AND BREECHING

B1 SCALE: NONE



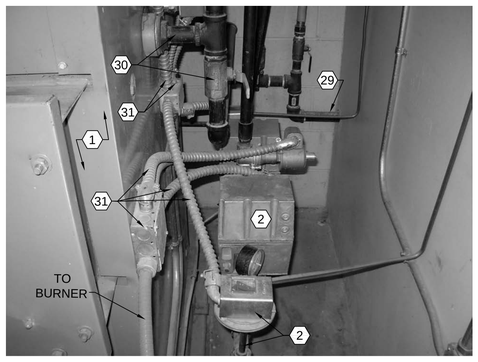
EXISTING HWS AND HWR TO BUILDING

B2 SCALE: NONE



EXISTING GAS TRAIN & ENTRANCE

B4 SCALE: NONE



EXISTING GAS TRAIN

A2 SCALE: NONE

SHEET NOTES:

1. REMOVE EXISTING HOT WATER BOILER AND ALL ASSOCIATED PIPING, STACK, BURNER, ELECTRICAL, CONTROLS, RELIEF VALVE ETC.
2. REMOVE EXISTING GAS PIPING, VALVES, ETC. TO POINT SHOWN ON SHEET MD401.
3. REMOVE EXISTING HWS FROM BOILER TO POINT SHOWN ON SHEET MD401.
4. REMOVE EXISTING CHEMICAL POT FEEDER AND PIPING.
5. EXISTING AIR COMPRESSOR AND TANK SHALL REMAIN.
6. EXISTING CULINARY HOT WATER HEATER SHALL REMAIN.
7. EXISTING FLOOR DRAIN SHALL REMAIN.
8. GAS PIPING TO WATER HEATER SHALL REMAIN.
9. EXISTING HWR SHALL REMAIN TO VALVE.
10. EXISTING ELECTRICAL PANEL SHALL REMAIN.
11. REMOVE EXISTING 8"Ø STACK.
12. 14"Ø STACK SHALL REMAIN.
13. EXISTING GAS VENTS THROUGH WALL SHALL REMAIN.
14. EXISTING WATER PIPING SHALL REMAIN.
15. EXISTING WATER MAKE-UP WITH BACKFLOW PREVENTOR, REGULATOR/PRV VALVE WITH BYPASS SHALL REMAIN.
16. REMOVE EXISTING INLINE PUMP REUSE AND EXTEND ELECTRICAL FOR NEW PUMP INSTALLATION.
17. REMOVE EXISTING AIR SEPARATOR AND AIR RELIEF PIPING TO POINT SHOWN ON SHEET MD401.
18. EXISTING HWS FROM THIS POINT SHALL REMAIN.
19. EXISTING PUMP CONTROL SHALL REMAIN AND BE REUSED FOR NEW PUMP.
20. EXISTING LADDER TO MEZZANINE.
21. REMOVE EXISTING HWR PIPING FROM BOILER CONNECTION TO BALL VALVE. BALL VALVE SHALL REMAIN.
22. EXISTING HWS SHALL REMAIN.
23. EXISTING HOT WATER HEATER FLUE SHALL REMAIN.
24. EXISTING COMPRESSION TANK SHALL REMAIN.
25. EXISTING HWR SHALL REMAIN.
26. 3'-0" ACCESS DOOR TO BOILER EQUIPMENT ROOM.
27. EXISTING ELECTRICAL PANEL SHALL REMAIN.
28. REMOVE THIS SECTION OF GAS VENT PIPING.
29. GAS PIPING ENTRANCE SHALL REMAIN.
30. REMOVE EXISTING WATER LEVEL CONTROLLER AND PIPING.
31. REUSE EXISTING ELECTRICAL AND CONTROL WIRING ETC. FOR NEW GAS TRAIN.
32. EXISTING CULINARY HOT WATER PIPING SHALL REMAIN.
33. EXISTING PRESSURE REDUCING VALVES SHALL REMAIN.
34. DRAIN PIPING FROM STACK SHALL REMAIN.

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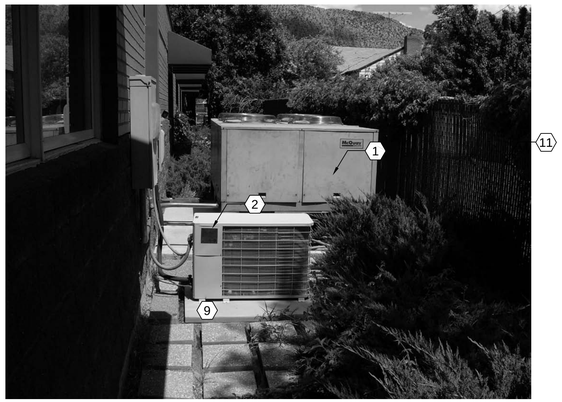
SHEET TITLE

MECHANICAL DEMOLITION PHOTOGRAPHS

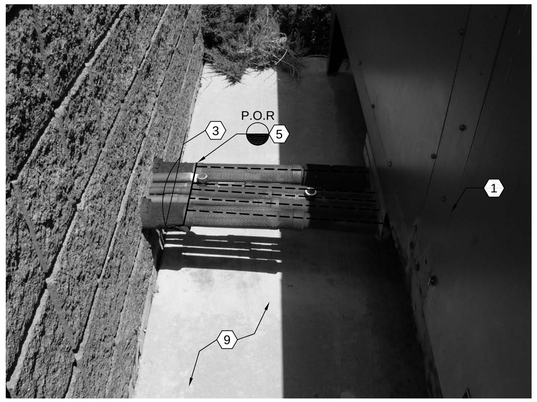
SHEET NO.

MD102



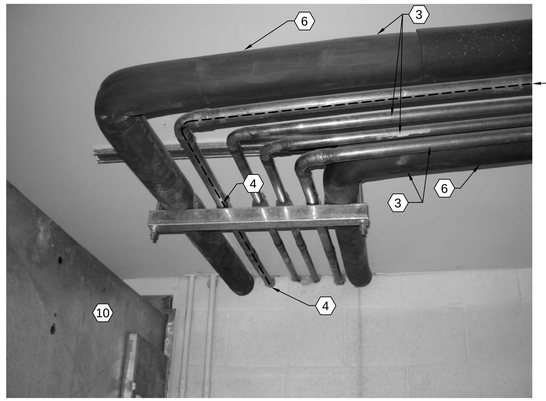
EXISTING AIR COOLED CONDENSING UNITS

C1 SCALE: NONE



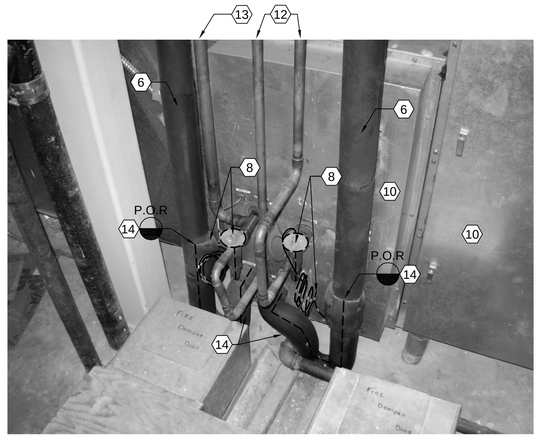
EXISTING EXTERIOR REFRIGERANT PIPING TO MEZZANINE

C2 SCALE: NONE



REFRIGERANT PIPING ENTRANCE TO MEZZANINE

C4 SCALE: NONE



REFRIGERANT PIPING CONNECTION TO COIL

A2 SCALE: NONE

AIR HANDLING UNITS VFD DRIVES

A3 SCALE: NONE

SHEET NOTES:

1. REMOVE EXISTING AIR COOLED CONDENSING UNIT AND ALL ASSOCIATED ITEMS.
2. EXISTING AIR COOLED CONDENSING UNIT SHALL REMAIN.
3. EXISTING REFRIGERANT PIPING SHALL REMAIN.
4. REMOVE OBSOLETE HOT GAS PIPING. REMOVE ONLY THE CAPPED LINE. CAP AT WALL.
5. REMOVE EXISTING REFRIGERANT PIPING FROM THIS POINT TO UNIT.
6. REMOVE EXISTING INSULATION FROM SUCTION PIPING IN MEZANNINE FAN ROOM.
7. REMOVE EXISTING VFD'S.
8. REMOVE EXISTING TXV VALVES, SENSING BULBS ETC.
9. EXISTING CONCRETE PAD SHALL REMAIN.
10. AIR HANDLING UNITS AND DUCTWORK SHALL REMAIN.
11. EXISTING FENCE SHALL REMAIN.
12. EXISTING LIQUID PIPING AT COIL SHALL REMAIN.
13. HOT GAS PIPING SHALL REMAIN.
14. REMOVE SUCTION PIPING AT COIL CONNECTION TO THIS LOCATION.

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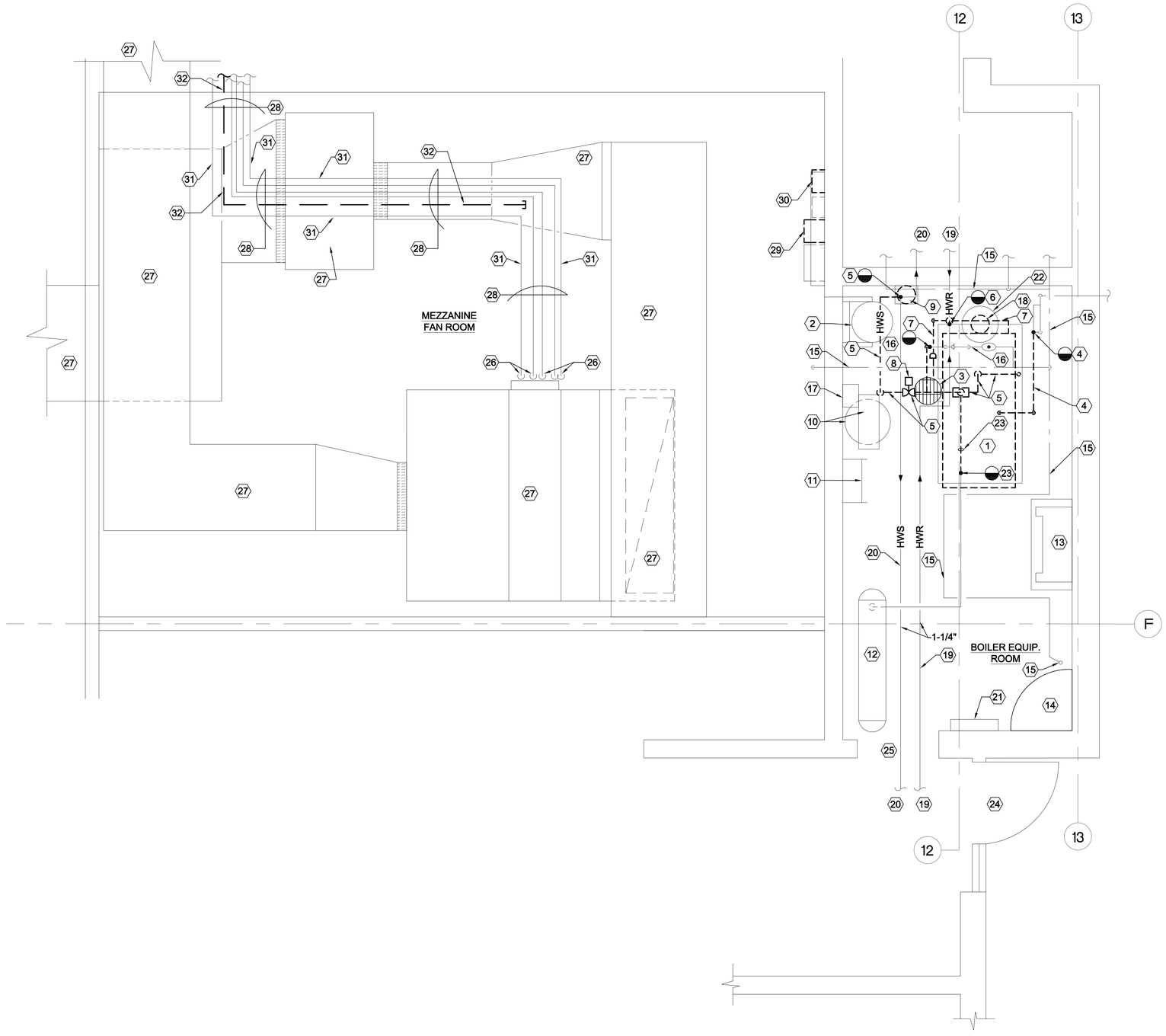
MECHANICAL DEMOLITION PHOTOGRAPHS

SHEET NO.

MD103



LARGE SCALE MECHANICAL DEMOLITION PLAN

SCALE: 1/2" = 1'-0"

SHEET NOTES:

1. REMOVE EXISTING HOT WATER GAS FIRED BOILER AND ALL ASSOCIATED ITEMS ie. BURNER, CONTROLS, ELECTRICAL, PIPING, ETC.
2. EXISTING CULINARY HOT WATER HEATER SHALL REMAIN.
3. EXISTING 12"Ø FLOOR DRAIN SHALL REMAIN.
4. REMOVE EXISTING GAS PIPING FROM BURNER TO THIS POINT, INCLUDING SAFETY VALVES, SAFETIES, PILOT PIPING AND VALVES.
5. REMOVE EXISTING HEATING HOT WATER SUPPLY PIPING, AIR SEPARATOR, PUMP TO POINT SHOWN. CAP EXISTING PIPING. SEE EXISTING PIPING. SEE SHEET ME401.
6. REMOVE EXISTING HOT WATER RETURN PIPING FROM BOILER CONNECTION TO BALL VALVE LOCATED IN THE VERTICAL PIPING. PIPING FROM THIS POINT UP SHALL REMAIN. SEE SHEET MD102.
7. REMOVE EXISTING DRAIN PIPING FROM PIPING TEE TO FLOOR DRAIN.
8. REMOVE EXISTING INLINE PUMP. REMOVE ELECTRICAL AND SET ASIDE FOR RE-USE TO NEW PUMP.
9. REMOVE EXISTING CHEMICAL POT FEEDER AND PIPING. POT SUPPORT SYSTEM SHALL REMAIN FOR NEW POT FEEDER.
10. EXISTING COMPRESSOR AND STORAGE TANK SHALL REMAIN.
11. EXISTING LADDER TO MEZZANINE AREA.
12. EXISTING COMPRESSION TANK SHALL REMAIN.
13. EXISTING ELECTRICAL PANEL SHALL REMAIN.
14. EXISTING FLOOR MOUNTED SERVICE SINK.
15. EXISTING WATER SUPPLY RISER AND PIPING SHALL REMAIN.
16. EXISTING WATER MAKE-UP FOR HOT WATER SYSTEM SHALL REMAIN TO POINT SHOWN INCLUDING BACKFLOW PREVENTOR, PRV STATION WITH BYPASS.
17. EXISTING PUMP STARTER SHALL REMAIN AND BE RE-USED FOR NEW PUMP.
18. REMOVE EXISTING 8" DIA. FLUE FROM BOILER TO FLANGE CONNECTION TO 14" STACK.
19. HWR PIPING SHALL REMAIN.
20. HWS PIPING SHALL REMAIN.
21. EXISTING ELECTRICAL PANEL SHALL REMAIN.
22. EXISTING 14" FLUE SHALL REMAIN.
23. REMOVE EXISTING AIR RELIEF PIPING TO POINT SHOWN. SEE SHEET ME401.
24. ACCESS DOOR 2'-10-½" FROM EXTERIOR.
25. ACCESS DOOR 3'-0" TO BOILER ROOM.
26. REMOVE EXISTING TXV VALVES, SUCTION TRAPS, AND CONTROL BULBS. SEE A2 SHEET MD103.
27. EXISTING AIR HANDLING UNITS AND DUCTWORK SHALL REMAIN.
28. EXISTING REFRIGERANT PIPING SHALL REMAIN.
29. REMOVE EXISTING TECO VARIABLE FREQUENCY DRIVE. SEE A3 SHEET MD103.
30. REMOVE EXISTING FREQROL Z200 VARIABLE FREQUENCY DRIVE. SEE A3 SHEET MD103.
31. REMOVE EXISTING SUCTION PIPING INSULATION.
32. REMOVE EXISTING OBSOLETE HOT GAS PIPING. CAP AT WALL.

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PROJECT NAME & ADDRESS

DEPARTMENT OF WORKFORCE SERVICES CEDAR BOILER/CONDENSER REPLACEMENT

DFCM No. 07184920

176 E. 200 N., Cedar City, Utah

MARK	DATE	REVISION

PROJECT MANAGER: WP
DRAWN BY: LGD
CHECKED BY: SLW
DATE: 11/21/07
WHW JOB NO.: 07029

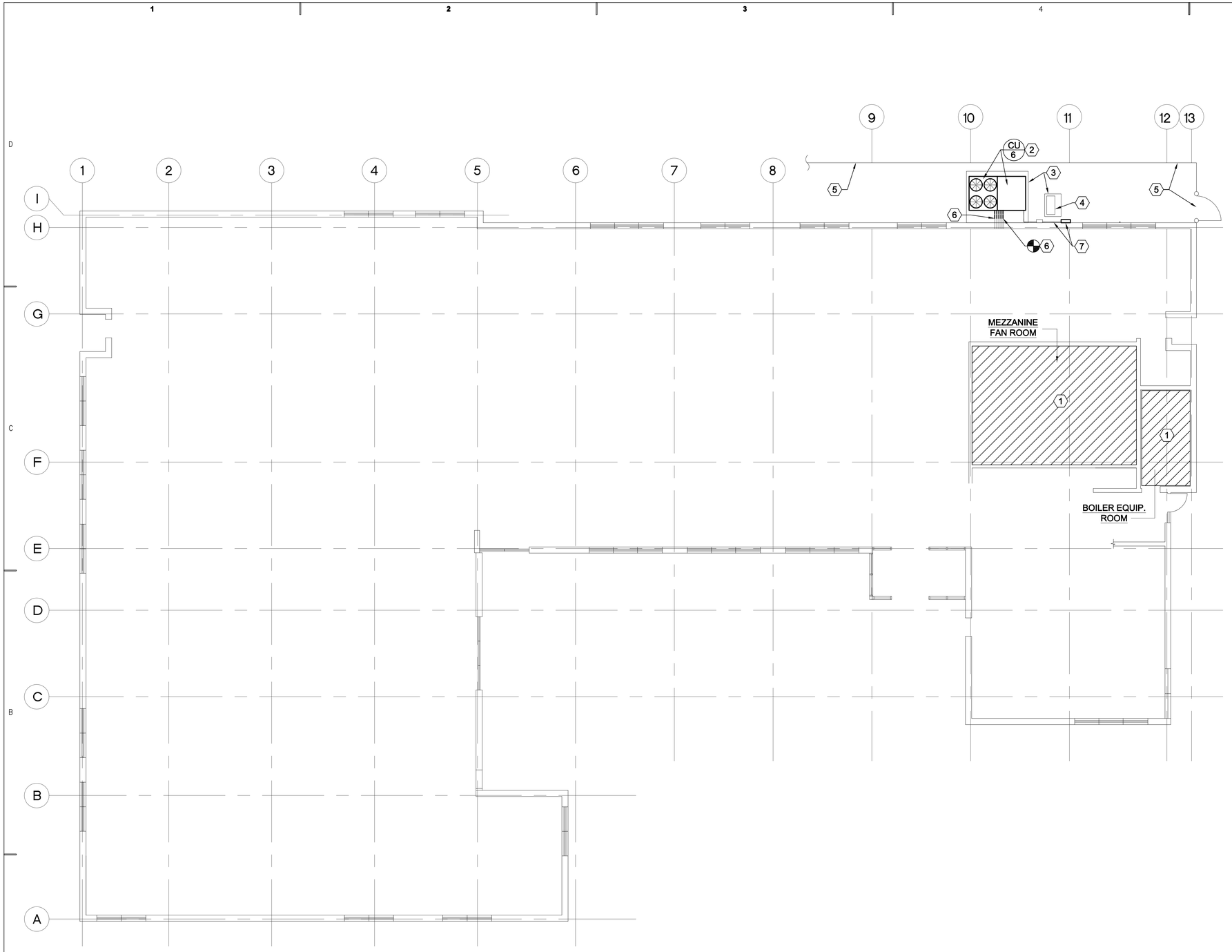
PROFESSIONAL ENGINEER
11/21/07
WINWARD M. PACKER
No. 375080
STATE OF UTAH

SHEET TITLE

LARGE SCALE MECHANICAL DEMOLITION PLAN

SHEET NO.

MD401



MECHANICAL FLOOR PLAN

SCALE: 1/8" = 1'-0"

SHEET NOTES:

1. SEE LARGE SCALE SHEET ME401 FOR THIS AREA.
2. PROVIDE NEW AIR COOLED CONDENSING UNIT AND ALL ASSOCIATED ITEMS, ELECTRICAL, CONTROLS ETC. SET ON EXISTING CONCRETE PAD.
3. EXISTING CONCRETE PADS SHALL REMAIN.
4. EXISTING CONDENSING UNIT, CONTROLS, PIPING, PAD AND ELECTRICAL SHALL REMAIN.
5. EXISTING CHAIN LINK FENCE AND GATE SHALL REMAIN.
6. PROVIDE NEW REFRIGERANT PIPING FROM CONNECTION TO EXISTING PIPING TO NEW CONNECTIONS ON NEW AIR COOLED CONDENSING UNIT. PROVIDE NEW FLEX. CONNECTIONS ON ALL REFRIGERANT PIPING AND NEW SIGHT GLASSES ON LIQUID PIPING.
7. NEW DISCONNECT AND WIRING. USE EXISTING WIRING AND CONDUIT IF IN GOOD CONDITION, TO BE DETERMINED BY ELECTRICAL DESIGN BUILD CONTRACTOR.

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STATE OF UTAH

SHEET TITLE

MECHANICAL FLOOR PLAN

SHEET NO.

ME101

SHEET NOTES CONT:

49 PROVIDE NEW EMERGENCY PUSH BUTTON BOILER SHUT-OFF. PROVIDE BY DESIGN BUILD ELECTRICAL CONTRACTOR.

50 BOILER PRESSURE RELIEF VALVE PROVIDED WITH BOILER INSTALLED BY THIS CONTRACTOR. ROUTE RELIEF PIPING TO FLOOR.

51 EXISTING GAS LINE TO HOT WATER HEATER SHALL REMAIN.

SHEET NOTES CONT:

44 EXISTING AIR HANDLING UNITS AND DUCTWORK SHALL REMAIN.

45 EXISTING REFRIGERANT PIPING SHALL REMAIN.

46 PROVIDE NEW VARIABLE FREQUENCY DRIVES FOR THE EXISTING AIR HANDLING UNITS. SEE SPECIFICATIONS.

47 PROVIDE NEW REFRIGERANT PIPING INSULATION, JOINTS SHALL BE SEALED.

48 PROVIDE NEW TXV VALVES AND THERMOSTATIC BULBS ON EXISTING LIQUID LINES. SEE DETAIL B1/ME501.

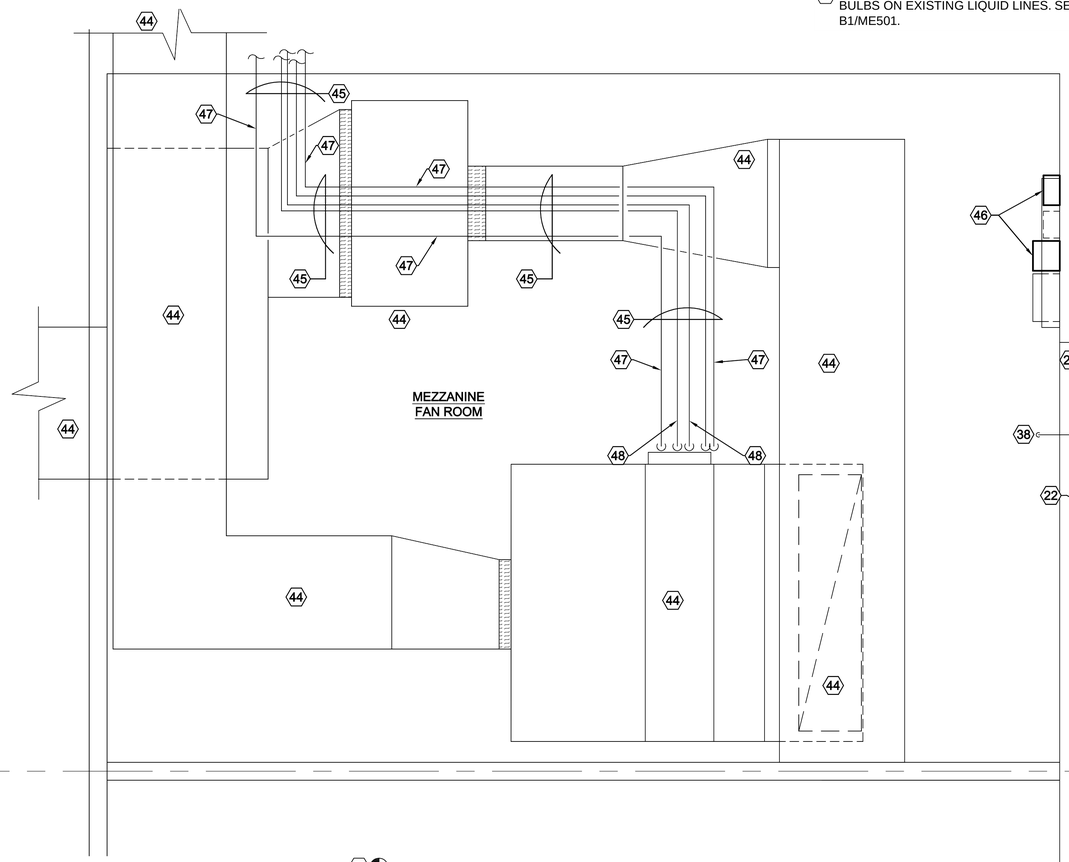
SHEET NOTES CONT:

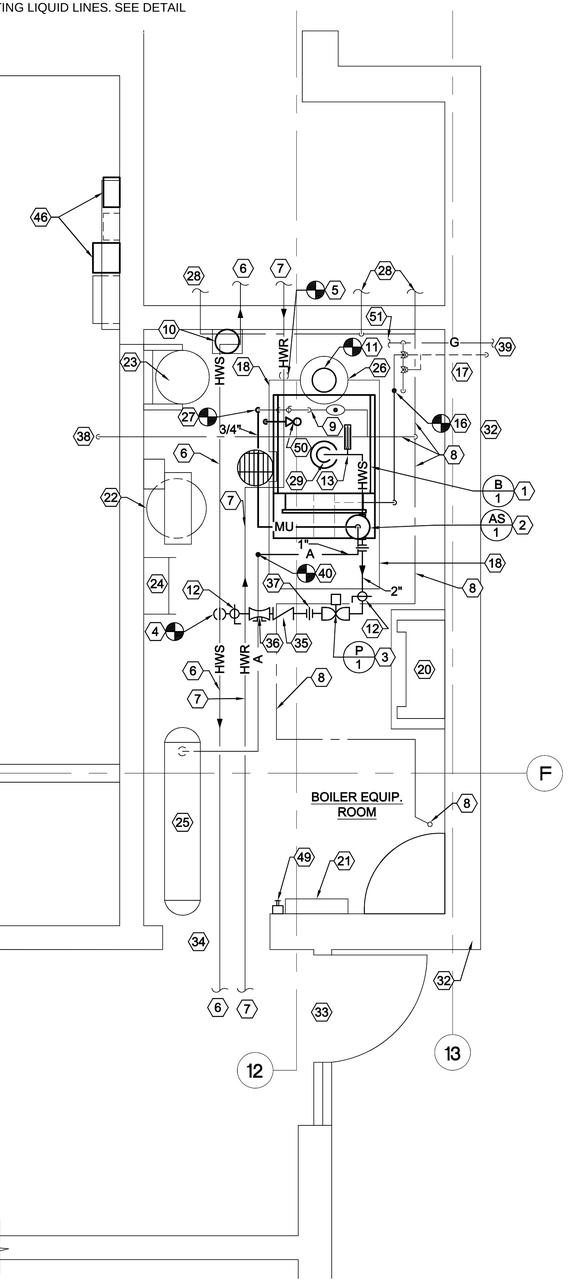
40 CONNECT TO EXISTING AIR RELIEF PIPING AT THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION.

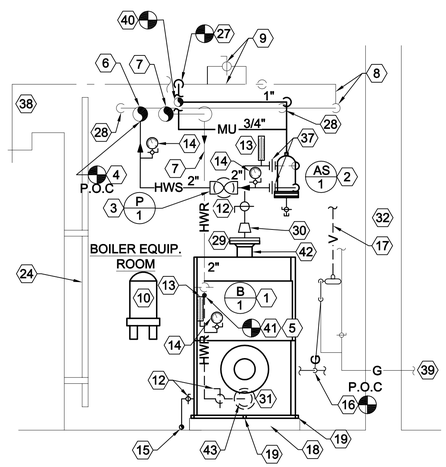
41 CONNECT TO EXISTING 2" HWR BELOW EXISTING VALVE AND ROUTE NEW PIPING TO HWR CONNECTION TO NEW BOILER AND PROVIDE NEW DRAIN.

42 4" BOILER HW SUPPLY CONNECTION.

43 3" BOILER HW RETURN CONNECTION.







MECHANICAL ELEVATION PLAN

SCALE: 1/2" = 1'-0"

LARGE SCALE MECHANICAL PLAN

SCALE: 1/2" = 1'-0"

SHEET NOTES:

1 PROVIDE NEW HOT WATER BOILER AND MAKE ALL PIPING, ELECTRICAL AND CONTROLS CONNECTIONS NECESSARY FOR A PROPER INSTALLATION. FIELD VERIFY PIPING LOCATIONS.

2 PROVIDE NEW AIR SEPARATOR. SEE DETAIL A4/ME501.

3 PROVIDE NEW INLINE HOT WATER PUMP. SEE DETAIL. C2/ME501.

4 CONNECT TO EXISTING HWS IN THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION.

5 CONNECT TO EXISTING HWR IN THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION. RE-USE EXISTING BALL VALVE.

6 EXISTING HWS SHALL REMAIN.

7 EXISTING HWR SHALL REMAIN.

8 EXISTING CULINARY COLD WATER SUPPLY.

9 EXISTING MU WATER STATION INCLUDING BACKFLOW PREVENTOR AND PRV STATION.

10 PROVIDE NEW CHEMICAL POT FEEDER. MOUNT ON EXISTING WALL SUPPORTS. PROVIDE NEW PIPING. SEE DETAIL A2/ME501.

11 NEW 8" FLUE-CONNECT TO EXISTING 14" FLUE THRU ROOF.

12 PROVIDE NEW 2" BALL VALVE.

13 PROVIDE NEW THERMOMETER.

14 PROVIDE NEW PRESSURE GAUGE WITH SHUT-OFF VALVE AND SNUBBER.

15 PROVIDE NEW 2" DRAIN LINE AND VALVE.

16 CONNECT NEW GAS PIPING INTO EXISTING AT THIS LOCATION. PROVIDE CSD-1 GAS TRAIN. SEE DETAIL C4/ME501.

17 CONNECT NEW GAS VENT PIPING TO EXISTING AT THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION. EXISTING VENT RISERS AND PIPING THRU WALL SHALL REMAIN.

18 EXISTING 4" BOILER PAD SHALL REMAIN.

19 PLACE NEW BOILER ON EXISTING CONCRETE PAD. BOLT BOILER TO PAD USING 6 - 2x2x3/8 ANGLE IRON WITH EXPANSION BOLTS AND NUTS. TWO ANGLES PER SIDE, ONE ANGLE PER FRONT AND BACK.

20 EXISTING ELECTRICAL PANEL.

21 EXISTING ELECTRICAL PANELS.

22 EXISTING COMPRESSOR AND TANK.

23 EXISTING GAS HOT WATER HEATER.

24 EXISTING LADDER TO MEZZANINE MECHANICAL ROOM.

25 EXISTING COMPRESSION TANK SHALL REMAIN.

26 EXISTING 14" DIA. FLUE - THRU ROOF.

27 CONNECT NEW MU WATER TO EXISTING IN THIS APPROXIMATE LOCATION. FIELD VERIFY.

28 EXISTING CULINARY WATER THRU NORTH WALL.

29 4" FLANGES FOR BOILER PIPING DISCONNECT.

30 4"x2" REDUCER.

31 3" FLANGES FOR BOILER PIPING DISCONNECT.

32 EXISTING OUTSIDE WALL.

33 EXISTING EXIT DOOR.

34 EXISTING ACCESS DOOR TO BOILER ROOM.

35 2" CHECK VALVE.

36 2" VENTURI BALANCING VALVE.

37 2" UNION.

38 EXISTING CULINARY WATER DROPPING IN MEZZANINE TO ROOM BELOW.

39 EXISTING GAS SUPPLY TO EXISTING METER SHALL REMAIN.

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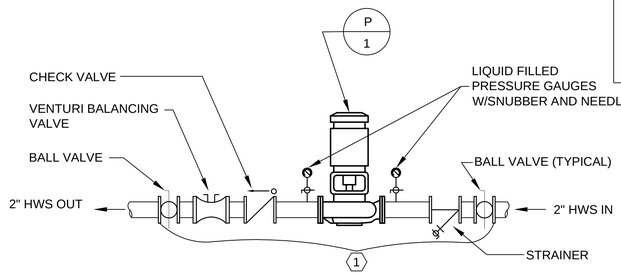
11/21/07
WINWARD M. PACKER
No. 375080
STATE OF UTAH

SHEET TITLE

LARGE SCALE MECHANICAL AND ELEVATION PLAN

SHEET NO.

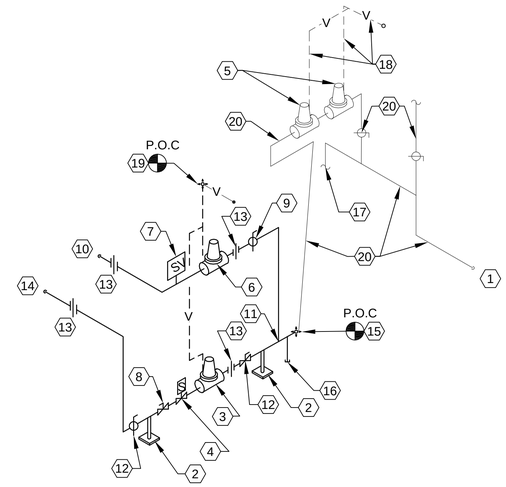
ME401



PROVIDE NEW PIPING, BALL VALVES, STRAINERS, REDUCERS, PRESSURE GAUGES ETC. FROM BALL VALVE TO BALL VALVE. USE ALL SCREWED FITTINGS AND VALVES.

C2 IN-LINE PUMP DETAIL

SCALE: NONE



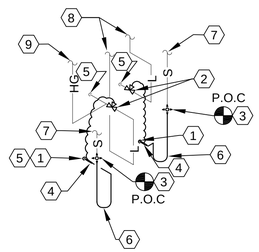
C4 CSD-1 AUTO-IGNITION GAS TRAIN DETAIL

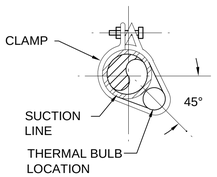
SCALE: NONE

NOTES

1. EXISTING GAS PIPING FROM METER.
2. SUPPORT GAS TRAIN FROM FLOOR. USE UNISTRUT AND 1/4" THK FLOOR PLATE.
3. GAS PRESSURE REGULATOR.
4. MOTORIZED SAFETY VALVE.
5. EXISTING PRESSURE REDUCING VALVE.
6. PILOT GAS PRESSURE REGULATOR.
7. PILOT SOLENOID VALVE.
8. LEAK TEST VALVE.
9. PILOT SHUT-OFF VALVE.
10. GAS TO PILOT CONNECTION ON BURNER.
11. GAS TAKE-OFF TO PILOT.
12. SHUT-OFF VALVE.
13. UNION.
14. GAS TO BURNER CONNECTION ON BURNER.
15. CONNECT TO EXISTING GAS LINE THIS LOCATION. SEE SHEET ME401. FIELD VERIFY EXACT LOCATION.
16. DRIP LEG.
17. GAS PIPING TO EXISTING HOT WATER HEATER.
18. EXISTING VENTS SHALL REMAIN THRU-WALL FROM GAS VALVES.
19. CONNECT NEW VENTS FROM GAS PRESSURE REGULATORS TO EXISTING VENT THRU-WALL.
20. EXISTING GAS PIPING SHALL REMAIN.

THERMOSTATIC BULB TO BE AS CLOSE TO COIL AS POSSIBLE NOT ALLOWED ON VERTICAL LINES.



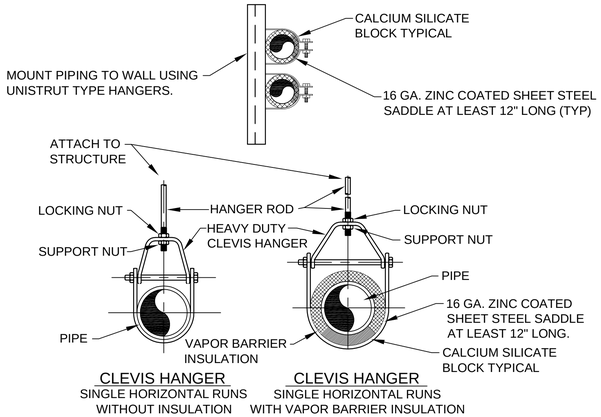


NOTES

1. NEW SUCTION PIPING CONNECTION TO EXISTING REFRIGERANT COIL INCLUDING PIPING, MANUFACTURED TRAP ETC.
2. NEW THERMOSTATIC EXPANSION VALVE.
3. NEW CONNECTION INTO EXSTING REFRIGERANT SUCTION PIPING.
4. NEW THERMOSTATIC BULB. SEE DETAIL.
5. EXISTING REFRIGERANT COIL.
6. NEW MANUFACTURED ONE PIECE TRAP
7. EXISTING SUCTION PIPING BACK TO NEW CONDENSING UNIT CU-6 SHALL REMAIN.
8. EXISTING LIQUID PIPING BACK TO NEW CONDENSING UNIT CU-6 SHALL REMAIN.
9. EXISTING HOT GAS PIPING BACK TO NEW CONDENSING UNIT CU-6 SHALL REMAIN.

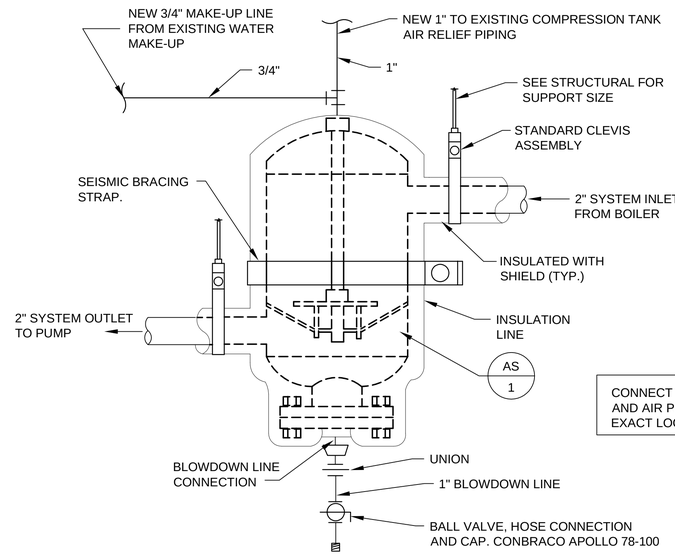
B1 DUAL REFRIGERANT COIL CONNECTION DETAIL

SCALE: NONE



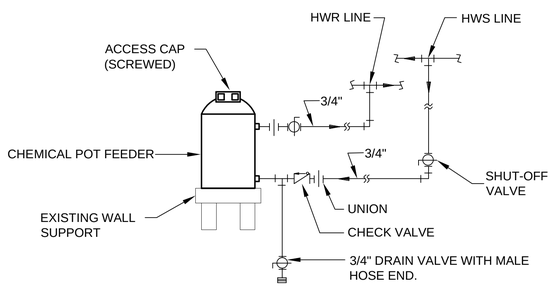
B2 PIPE HANGER DETAIL

SCALE: NONE



A4 AIR SEPARATOR TANK DETAIL

SCALE: NONE



A2 CHEMICAL TREATMENT SCHEME

SCALE: NONE

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PROFESSIONAL ENGINEER 11/21/07 WINWARD M. PACKER No. 375080 STATE OF UTAH

SHEET TITLE

MECHANICAL DETAILS

SHEET NO.

ME501

BOILER SCHEDULE

SYMBOL	MBH INPUT	MBH OUTPUT	HP	WATER TEMP °F		FURNACE VOLUME CU. FT.	HEATING SURFACE SQ. FT.		OPERATION WEIGHT LBS	MAKE AND MODEL #	SCHEDULE NOTES
				IN	OUT		FIRE SIDE	WATER SIDE			
B 1	528	422	12.6	160	180	8.8	59	63	2450	BURNHAM 4FW 63 50	1,2,3

1. ALTITUDE IS APPROXIMATELY 5720 FEET.
2. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS. VERIFY FLUE SIZING AND MATERIAL WITH EACH BOILER MANUFACTURER AND AND INSTALL ACCORDINGLY. EXISTING 14"Ø BOILER STACK SHALL REMAIN. BOILERS WITH FLUES OVER 14"Ø ARE NOT ACCEPTABLE.
3. BOILER SHALL OPERATE OFF OF FACTORY SUPPLIED CONTROLS WITH AN ENABLE SIGNAL FROM THE EXISTING CONTROLS.

PUMP SCHEDULE

SYMBOL	TYPE	GPM	FT. HEAD	RPM	SUCTION SIZE	DISCHARGE SIZE	MOTOR			SIZE	SERVICE	SCHEDULE NOTES
							V - Ø - Hz	HP	RPM			
P 1	IN-LINE	42	-	1725	2"	2"	208-3-60	1	1750	2x2x51/4	HOT WATER	1,2,3

1. PROVIDE REMOVABLE INSULATION KIT AROUND PUMP SECTION.
2. PUMP SHALL BE SIZED IN THE MIDDLE PART OF THE CURVE.
3. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.

AIR COOLED CONDENSING UNIT SCHEDULE

SYMBOL	AREA SERVED	MIN SIZE (TONS)	COMPRESSOR MOTOR			CONDENSER FANS			COIL FACE AREA SQ FT		MCA	MOCP	MNUF. & MODEL #	SCHEDULE NOTES
			No.	RLA (EACH)	LRA (EACH)	FANS NO.	HP	RPM	CIRCUIT-1	CIRCUIT-2				
CU 6	OLD EXISTING WEST END	30	CIRCUIT #1-3 CIRCUIT #2-4	30.1 30.1	189 189	4	1 (EA)	1140	26.3	26.3	151	225	MCQUAY/ACZ030B	1,2,3,4

1. REFRIGERANT 407C.
2. AT DESIGN CONDITIONS AND 95° F EAT.
3. SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS.
4. ELECTRIC SERVICE: 208/3/60.
5. UNIT EER SHALL BE MINIMUM OF 10.
6. FAN & CONTROL POWER 5.6 KW.
7. FIELD WIRE - 3@ 2/0, BREAKER SIZE 175A. DISCONNECT SIZE 225A.

AIR SEPARATOR SCHEDULE

SYMBOL	CAPACITY GPM	MAX PRESSURE DROP FT.	INLET / OUTLET SIZE	MAKE & MODEL	SCHEDULE NOTES
AS 1	56	2.3 FT	2"	BELL & GOSSETT RL-2	1

1. FOR OTHER APPROVED MANUFACTURERS SEE SPECIFICATIONS.

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SHEET TITLE

MECHANICAL SCHEDULES

SHEET NO.

ME601